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BARC is part of the USDA's Agricultural Research Service and encompasses programs at the Beltsville Agricultural Research Center; the U.S. National Arboretum in Washington, D.C.; and worksites in Chatsworth, New Jersey; Presque Isle, Maine; and McMinnville, Tennessee. BARC is the largest and most diversified agricultural research complex in the world. BARC's record of accomplishments and its ongoing programs have made it a world leader in agricultural research.

Blowing Our Own Horn!

BARC SCIENTISTS' ARTICLE IN LIST OF TOP 25 DOWNLOADS BY SCIENCEDIRECT USERS

An article entitled, "Nitrogen deficiency effects on plant growth, leaf photosynthesis, and hyper spectral reflectance properties of sorghum" by D. Zhao, K. R. Reddy, V. G. Kakani, and V. R. Reddy is listed at the top of the list of the "TOP25" Hottest Articles in *ScienceDirect* for the European Journal of Agronomy. The TOP25 Hottest Articles results reflect the number of downloads by *ScienceDirect* users in a particular 3-month period, in this case April-May-June, 2005. You can search other fields of interest or sign up for the free TOP25 Hottest Articles alert service by visiting <http://info.sciencedirect.com/using/personalization/top25/>.



Happy Holidays!



The Poinsettia plants that are purchased today are a far cry from the wild, 8-plus feet tall plants that originated in Mexico. Research performed over the past seventy years at Beltsville has significantly influenced this \$300+ million wholesale industry. Poinsettias are the number one potted plant in market value.

The new Poinsettia colors like pinks and yellows, and spotted types are another outgrowth of the work done by Dr. Stewart (see below ~ 1970's) on chimeras. Chimeras are plants with tissues that are genetically different than their parents. The basic science done by Dr. Stewart has enabled commercial breeders to produce these new color variations.



Poinsettias A History of BARC Impacts



1920's • Drs. Wightman Gardner and Harry Allard discovered that Poinsettias require longer nights to induce flowering. When a Poinsettia flowers, the upper leaves (the bracts) turn bright red, and the center of the plant forms small yellow flowers.

1960's • Dr. H. Marc Cathey began studies on the lighting requirements of Poinsettia as well as the use of growth regulators for improving commercial production of Poinsettias. Dr. Cathey's research resulted in a production protocol that not only guaranteed when the Poinsettia would "flower" but also resulted in a plant with a compact growth form.

1970's • Dr. Robert Stewart developed Poinsettia breeding lines with significantly improved keeping quality. Before this research, Poinsettia leaves would fall off the plant shortly after they were developed. Dr. Stewart's research resulted in the development of cultivars (i.e., 'Ruff and Ready') in which the leaves and bracts remained on the plant for the entire holiday season. 'Ruff and Ready' is still used as a parent for new Poinsettia cultivars on the market today.

1990's • Dr. Ing-Ming Lee discovered that free-branching, dwarfed Poinsettia, which produces the brilliant-red bracts favored by consumers, is prone to infestation by a phytoplasma. Phytoplasmas are minute organisms which are usually disease causing in plants. But in this case, they induce the growth form which is highly prized in Poinsettias. This finding has also led the way to produce virus-free plants.

Community Interest

"SCIENCE IN YOUR SHOPPING CART"

A new, revised edition of the ARS publication "Science in Your Shopping Cart" is available. "This illustrated booklet tells the ongoing story of ARS contributions to the abundance, variety, convenience, and healthfulness of the contents of American shopping carts." To view a PDF version, go to www.ars.usda.gov/is/np/shopcart/shopcartintro.html. For questions about Science in Your Shopping Cart, please contact Ruth Coy at 301-504-1663 or rcoy@ars.usda.gov.



2006 US NATIONAL ARBORETUM INTERNSHIPS ARE NOW AVAILABLE

The U.S. National Arboretum offers a limited number of internships to qualified individuals seeking on-the-job work experience and training in horticulture, botany, research, education, facilities management, and public garden administration. College credit may be arranged by the student and is encouraged. Application information may be obtained by visiting www.usna.usda.gov/Education/intern.html.

USDA-ARS-BARC & BRAZIL-EMBRAPA LABEX COLLABORATION

The Labex program, underway since 1998, is coordinated by ARS' Office of International Research Programs; Labex brings Brazilian scientists to ARS laboratories for 2- to 3-year appointments and encourages other formal and informal exchanges between the two research services. In early 2006, Dr. Janet Novotny of the Diet and Human Performance Lab will host two scientists from the Brazilian Agricultural Research Corporation (Embrapa) as part of the Embrapa-ARS Inter-American Agricultural Research Network. Dr. Manuela Araujo from Embrapa Food Technology and Dr. Edy Souza Brito from

Embrapa Tropical Agroindustry will undergo training which covers methodology of analysis of HPLC of three groups of phytonutrients, carotenoids, anthocyanins and flavonoids and also proanthocyanidins. Both researchers will also spend some time at the Fruit Laboratory to get acquainted with the total antioxidant activity analysis method (ORAC, oxygen radical absorbance capacity). These activities will strengthen the research network on functional foods that has been established recently in Embrapa. Furthermore, it will provide an opportunity to study basic aspects of the tropical fruits and to enhance the ARS/Embrapa collaboration.



Mark Your Calendar!



UPCOMING BIOSCIENCE SHOWCASE



On Thursday, February 23, 2006, in cooperation with the Maryland Technology Development Corporation (TEDCO), BARC will be holding a Bioscience for Life: Technology to Enhance Health, the Environment and Agriculture showcase at the Holiday Inn College Park. The showcase will highlight diverse areas of BARC research including swine immunology, human nutrition and plant germplasm development that are available for technology transfer. Companies involved in bioscience-health; bioenergy; agricultural business; growers-nurseries-plant breeders; environmental safety and protection; pharmaceuticals; food safety and quality improvement; development of value-added products from animal by-products; and improving agriculture, human or animal health and/or the environment are the target audience. For more information, e-mail BA-Office@ba.ars.usda.gov or call Robbie Melton of TEDCO at 410-715-4164.

BHNRC WINTER/SPRING SEMINAR SERIES BEGINS

The BHNRC Winter/Spring Seminar Series will kick off on Tuesday, January 10, with a presentation by BARC's own Joanne Holden of the Nutrient Data Lab. Her presentation is entitled "Dietary Supplements Ingredient Database" and will be held at 1:30 PM in Building 005, Room 021, BARC-West. For more information regarding this seminar, please contact Ellen Harris at 301.504.0610.



WORKSHOP ON SPATIAL STATISTICS

The "Spatial Statistics for Agricultural & Environmental Research Applications" workshop is being held at BARC on March 15-16, 2006. The workshop is a collaborative effort among statisticians at USDA/ARS, DOI/USFW and DOI/USGS. Dr. Jay Ver Hoef is the keynote speaker, and presentations will be given by faculty from various universities and by USDA, USGS, and USFW statisticians and scientists. For additional information, please contact spatial@ba.ars.usda.gov.

THE BALTIMORE WASHINGTON PARTNERS FOR FOREST STEWARDSHIP

On January 23, 2006, a memorandum of understanding will be signed by Dr. Phyllis Johnson, Director of BARC, along with representatives of the State of Maryland, of US Fish & Wildlife Service Patuxent Research Refuge, of NASA/Goddard Space Flight Center, and of US Army Fort George G. Meade. Collectively, these organizations own and manage over 40 square miles of land, 64% of which is either forested or wetlands. The Partnership seeks to expand tree canopy cover, conserve and improve wildlife habitat, reduce nutrient and sediment pollution to the Chesapeake Bay, promote coordinated land management and collaborative scientific research at these facilities, and offer environmental education opportunities to the public. The signing will take place at the National Wildlife Visitor Center in Laurel, Maryland at 2:30 PM.

UPCOMING BARC IN-DEPTH LAB REVIEW



The Hydrology and Remote Sensing Laboratory (HRSL) will be undergoing an in-depth review on February 21-23, 2006. The review is open to the public on the first day from 8:30 AM to noon. For more information, contact Dr. Walter Rawls, Research Leader, at 301.504.7490. Learn more about HRSL by visiting <http://www.ars.usda.gov/ba/anri/hrsl>.

DISTINGUISHED LECTURE SERIES

*Next Lecture is Wednesday, January 25th
Lecture Series is Open to the Public*

Speaker: Dr. Garth Fletcher, Ocean Sciences Centre, Memorial University of Newfoundland, Canada

Title: "Transgenic Salmon from Bench to Market: What does it Take for Success?"

Time/Location: January 25, 10:30 AM, Building 003 Auditorium, BARC-West

For more information, call 301.504.6078.



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